

Fire Detection: Data Access & Analysis

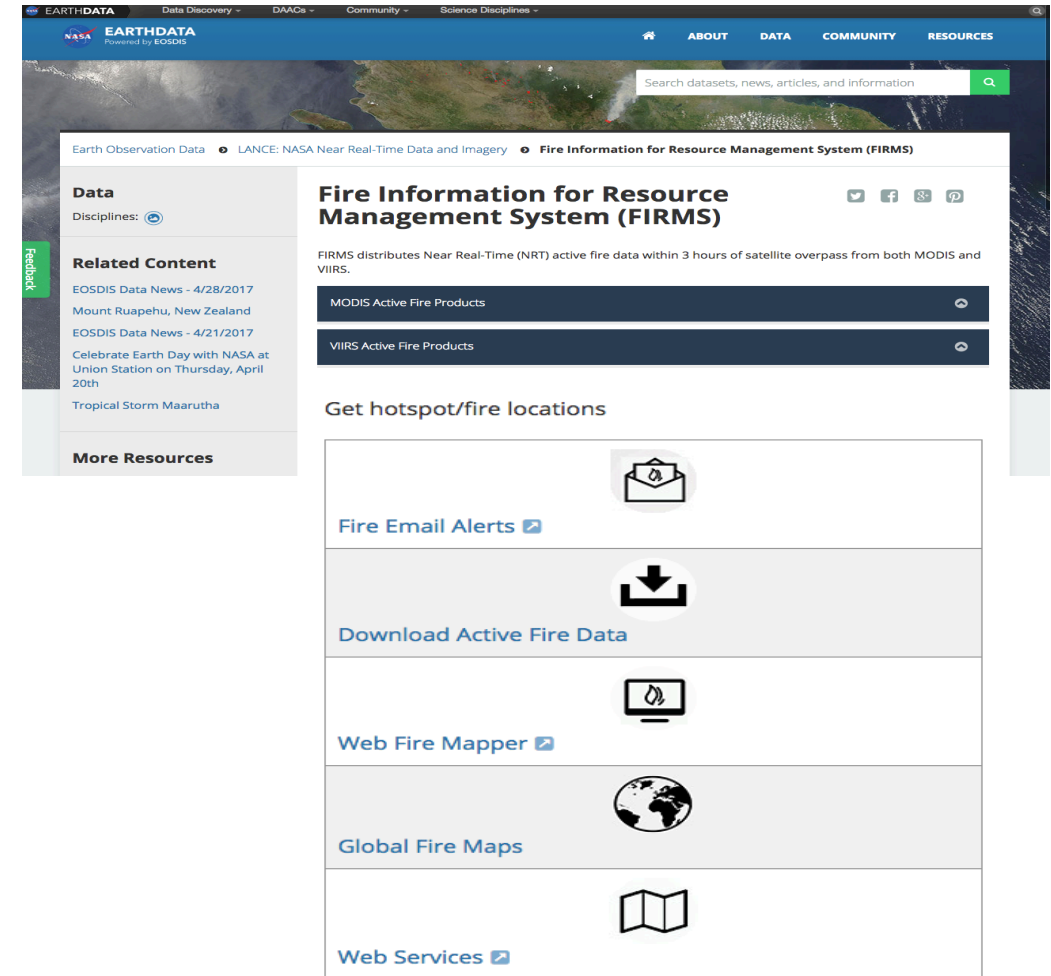
Melanie Follette-Cook, Pawan Gupta, and Bryan Duncan

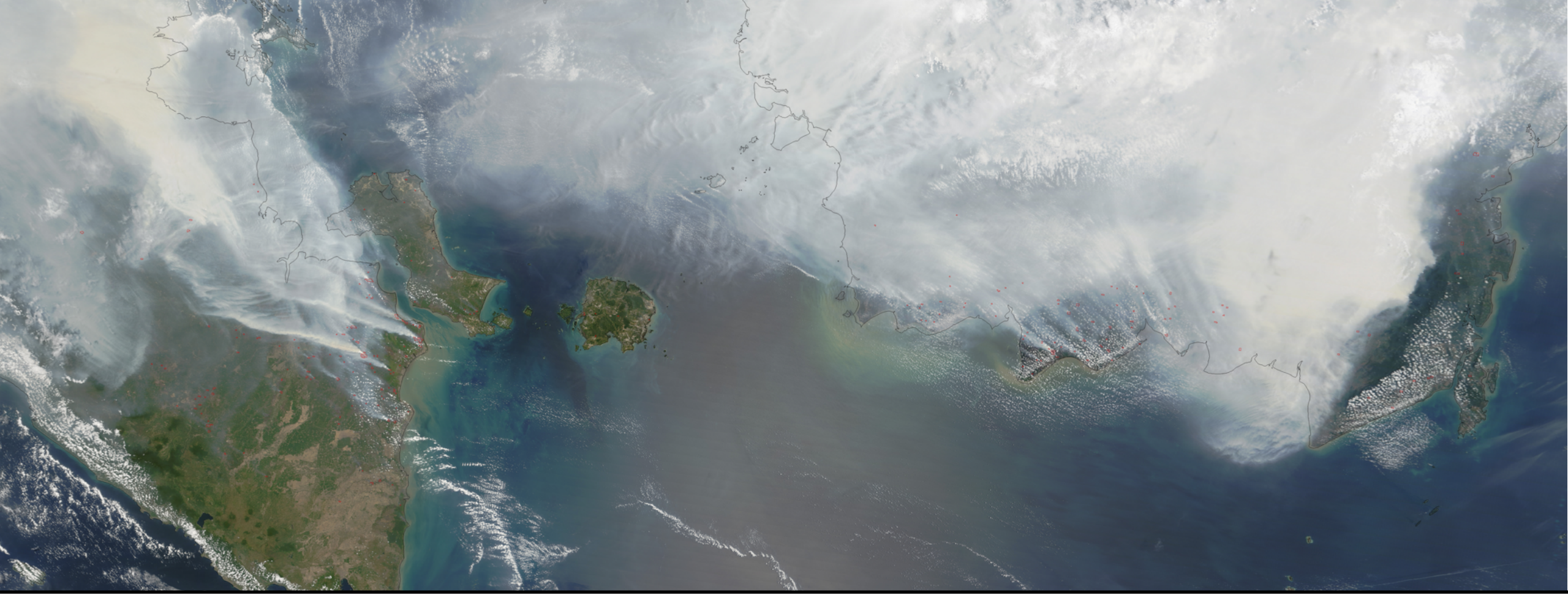
NASA Remote Sensing for Air Quality Applications, March 20-23, 2018, Jakarta, Indonesia

Fire Information for Resource Management System (FIRMS)

<https://earthdata.nasa.gov/earth-observation-data/near-real-time/firms>

- Near real-time (NRT) active fire data within 3 hrs of satellite overpass
- Global MODIS and VIIRS fire locations
- Historical data available
- Available in:
 - Email alerts
 - GIS-friendly file format
 - Visualization in **Web Fire Mapper** or **Worldview**





Web Fire Mapper

Step 1: Click Web Fire Mapper

The screenshot shows the NASA EarthData website interface. The top navigation bar includes the NASA logo, 'EARTHDATA Powered by EOSDIS', and links for 'ABOUT', 'DATA', 'COMMUNITY', and 'RESOURCES'. A search bar is located on the right. The main content area is titled 'Fire Information for Resource Management System (FIRMS)' and includes a description of the system. A sidebar on the left lists various links under 'Data' and 'FIRMS'. The 'Web Fire Mapper' link is circled in red in the 'Get hotspot/fire locations' section.

Earth Observation Data • **LANCE: NASA Near Real-Time Data and Imagery** • **Fire Information for Resource Management System (FIRMS)**

Data
Disciplines:

FIRMS
[About FIRMS](#)
[Data Sources](#)
[Active Fire User Guides](#)
[FAQs](#)
[Disclaimer](#)
[LANCE / FIRMS Mailing Lists](#)
[Links](#)
[Acknowledgements / Citation](#)

Data from FIRMS
[Fire Map](#)
[Fire Alerts](#)
[Active Fire Data: SHP / TXT / KML](#)
[Web Services](#)
[Archive Download](#)

Fire Information for Resource Management System (FIRMS)
The Fire Information for Resource Management System (FIRMS) distributes Near Real-Time (NRT) active fire data within 3 hours of satellite overpass from both the Moderate Resolution Imaging Spectroradiometer (MODIS) and the Visible Infrared Imaging Radiometer Suite (VIIRS).

MODIS Active Fire Products
VIIRS Active Fire Products

Get hotspot/fire locations

Fire Email Alerts	
Download Active Fire Data	
Web Fire Mapper	
Global Fire Maps	



Step 2: Display Fires Detected by MODIS for the Past 24 hours

FIRMS BETA
Fire Information for Resource Management System

Last 24 hrs

Fire Map

Active Fire Data

Fire Alerts

Archive Download

Web Services

2000 km

Quick View | Advanced

24 hrs | 48 hrs | 72 hrs | 7 days

☐ VIIRS 375m

Day | Night

☒ MODIS / Aqua

Day | Night

☒ MODIS / Terra

Day | Night

☐ VIIRS - Corrected Reflectance (true)

< 2018-02-28 >

Note: Cloud cover may obscure active fire detections.

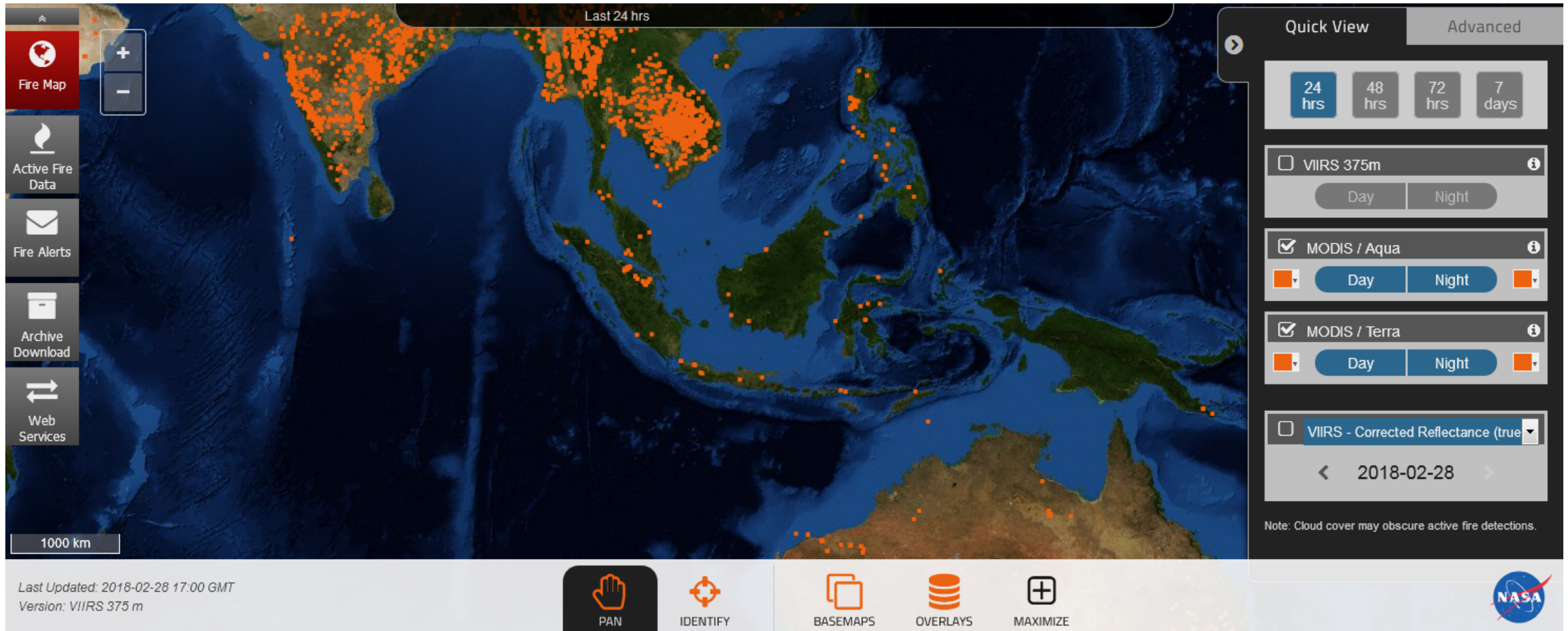
Last Updated: 2018-02-28 17:00 GMT
Version: VIIRS 375 m

PAN | IDENTIFY | BASEMAPS | OVERLAYS | MAXIMIZE

NASA Official: Ed Masuoka | [Web Privacy Policy](#) | [Data & Information Policy](#) | [Communications Policy](#) | [Freedom of Information Act](#) | [USA.gov](#)

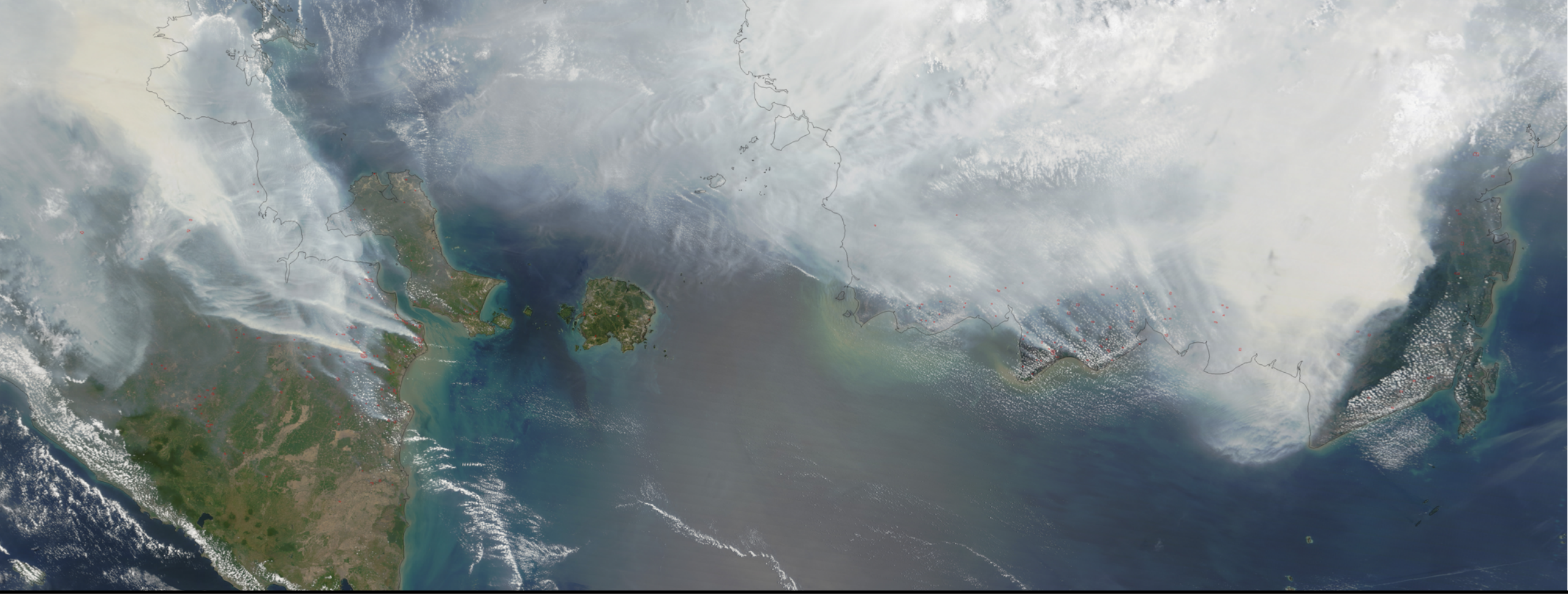


Step 3: Zoom Over Region of Interest and Identify Area of Maximum Fire Density



Exercise & Questions

- Repeat Step 3 using VIIRS datasets
- What are the differences in fire counts between MODIS and VIIRS?

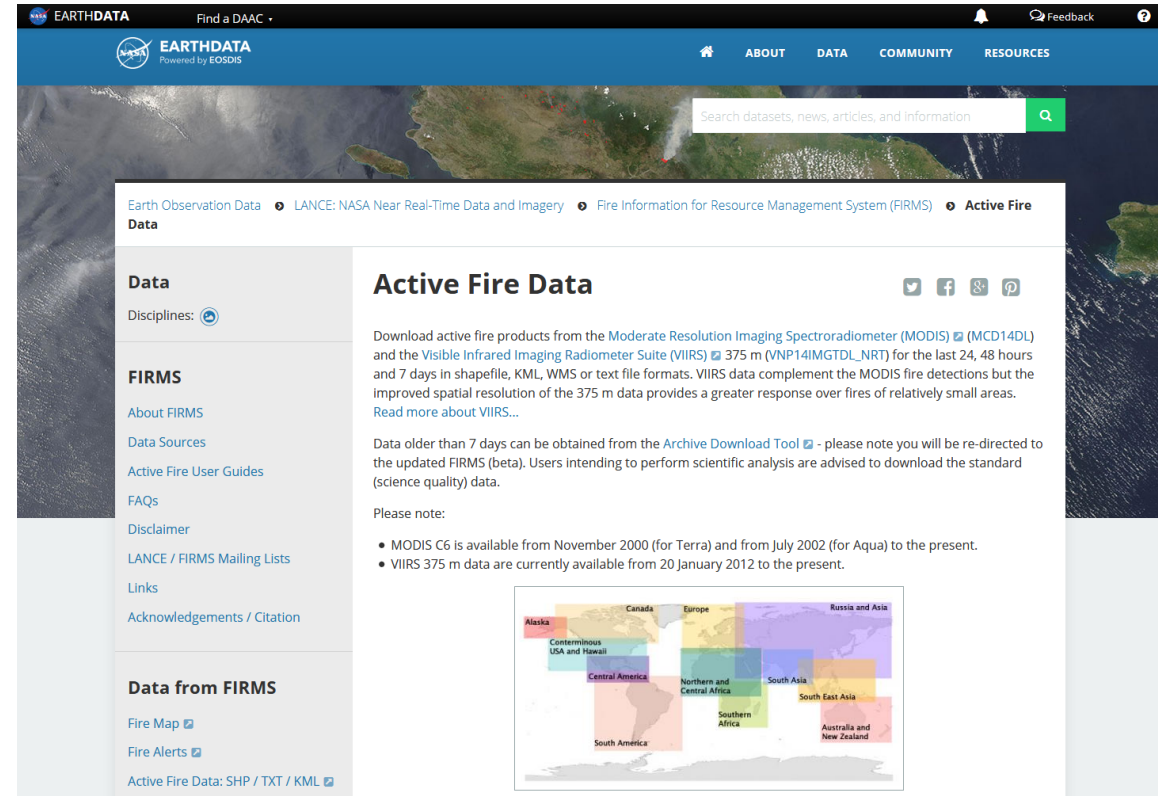


Active Fire Data

Active Fire Data

<http://earthdata.nasa.gov/earth-observation-data/near-real-time/firms/active-fire-data>

- Download active fire products
 - MODIS (C6 2000/2002 – Present)
 - VIIRS (12 Jan 2012 – Present)
- Past 24 hrs, 48 hrs, 7 days
- KML, WMS, text file formats
- Data older than 7 days can be obtained through the archive
 - <https://firms.modaps.eosdis.nasa.gov/download/>



Active Fire Data

Download active fire products from the Moderate Resolution Imaging Spectroradiometer (MODIS) (MCD14DL) and the Visible Infrared Imaging Radiometer Suite (VIIRS) 375 m (VNP14IMGTDL_NRT) for the last 24, 48 hours and 7 days in shapefile, KML, WMS or text file formats. VIIRS data complement the MODIS fire detections but the improved spatial resolution of the 375 m data provides a greater response over fires of relatively small areas. [Read more about VIIRS...](#)

Data older than 7 days can be obtained from the [Archive Download Tool](#) - please note you will be re-directed to the updated FIRMS (beta). Users intending to perform scientific analysis are advised to download the standard (science quality) data.

Please note:

- MODIS C6 is available from November 2000 (for Terra) and from July 2002 (for Aqua) to the present.
- VIIRS 375 m data are currently available from 20 January 2012 to the present.

Data from FIRMS

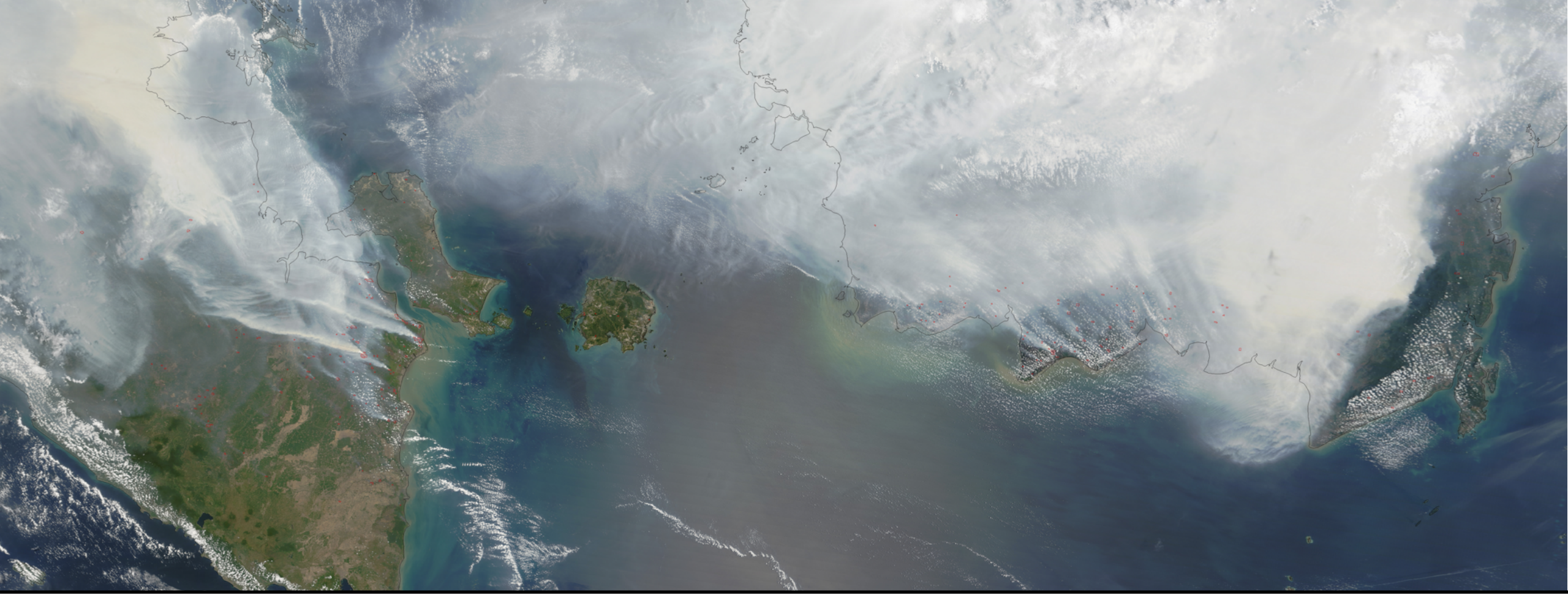
- [Fire Map](#)
- [Fire Alerts](#)
- [Active Fire Data: SHP / TXT / KML](#)



Exercise

- Explore the various data formats for which active fire data is available
- Download data for South East Asia over the past 24 hours in KML format
- Open the file in Google Earth

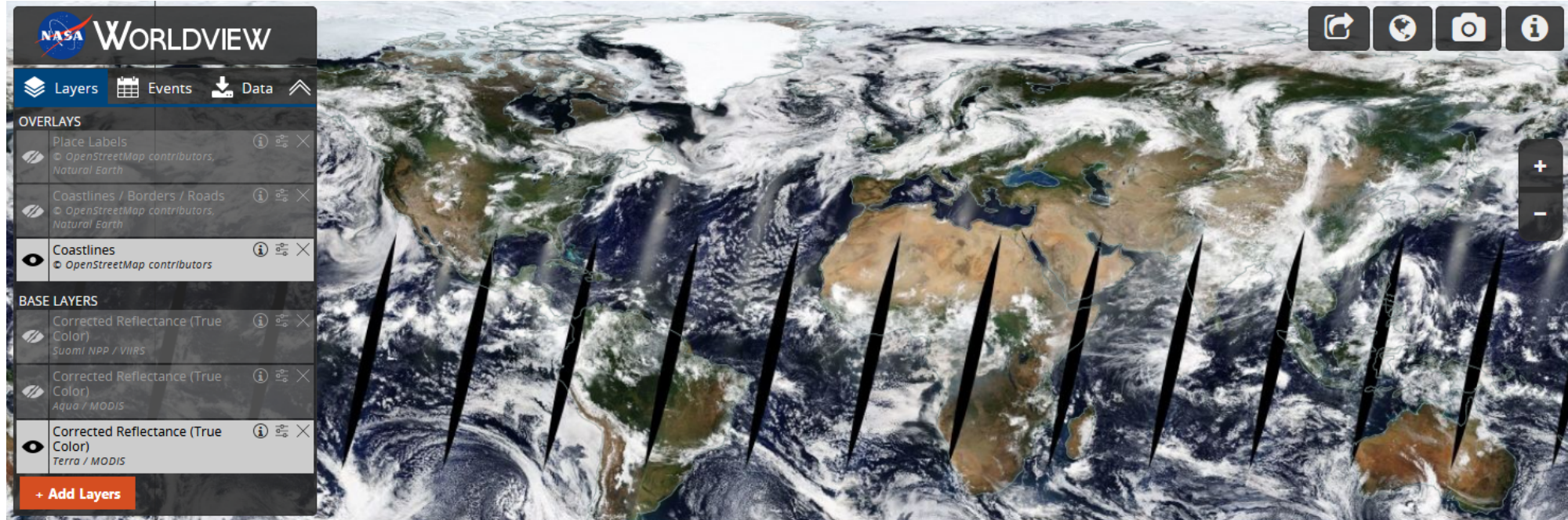




Worldview

NASA Worldview

<https://worldview.earthdata.nasa.gov/>



- Application that allows the user to:
 - interactively browse, save, or share satellite imagery layers
 - download the data
- Some imagery available in near real time (NRT) or within three hours of observation



Exercise

- Display VIIRS fire detection without any base layer from August 1-10, 2017
- Zoom in and animate over South East Asia.

